An

Inaugural Dissertation

on

Cynanche Trachealis

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so fatal to infancy & childhood

This disease has its origin in most cases in an inflamation of the mucous membrane lining the Larynx and Trachea - the latter however is the part most frequently affected; but it extends subsequently to the bronchii, often throughout their ramifications, and to the tissue of the lung itself; giving rise sooner or later in most cases to an exudation of coagulable lymph upon the inflamed membrane of the air passages, forming a pseudo membrane, extending, in some instances throughout, the minute ramifications of the bronchii and investing, more or less the air cells themselves - The diphtheritic croup however is exceedingly rare.

In some instances this adventitious membrane is not formed at all; the inner surface of the wind pipe is seen to be merely reddened and tumid, and covered more or less with viscid mucous; or perhaps with a few shreds of concrete albumen here and there.

Croup is particularly a disease of early life; hence age is the chief predisposing cause of the disease. The interval that lies between the two periods of weaning and puberty is the time during which its visitations are chiefly to be apprehended. It rarely occurs Very few cases of it occur during the first year of infantile life

Some writers are of the opinion, that the disease occurs more frequently at the second year than any other. This is supposed to be connected, with the changes which ensues in regard to diet upon the child's

being weaned - The liability to ~~number of children affected with~~ croup gradually decreases from the second year onwards - It is the opinion of some writers that it never occurs in adults as a primary disease - But it is known occasionally to happen subsequently to the period of puberty and up to the 21st year; and sometimes later -

From the observations of different authors it would appear that Males are more frequently affected with the disease than females - It is said that children of a sanguineous temperament, of a florid complexion inclined to fatness, and to all appearances in the enjoyment of perfect health, are those in whom croup is most liable to occur as a primary disease; and hence those families in which this temperament prevails, almost every infant is attacked with the disease, as it reaches its first or

second year. When croup has once occurred in a family it is very liable to occur again either to attack the same children or some others of the family. Croup is exceedingly apt to recur again. Relapses may happen within a few days after apparent recovery, and these are generly very perilous. But besides this tendency to the severe symptoms, the child is often affected, with a cough, and hoarseness, and worn with aphonia for a long time. And it is obvious that these relics of the acute attack continue, it is easily brought back again.

Among the chief exciting causes of croup is unquestionably the impressions upon the body of a cold and damp atmosphere, or sudden transitions of temperature. Hence the disease is found to be most prevalent during the variable, damp and chilly weather which prevails in the commencement of Spring

and at the close of Autumn. It is also of much more frequent occurence, in situations naturally abounding in moisture, than those of an opposite character. Some authors have considered it to a certain extent, endemic in valleys surrounded, by high mountains, and in the vicinity of Lakes and large rivers- It may be produced at any season of the year, by sudden alternations of temperature. It not unfrequently occurs sporadically.— Sitting or lying down on a damp ground, or in a current of air after the body has been heated from exercise, or a sudden chilling of the body from any other cause, is very apt to induce the disease.

It is mentioned also as being particularly apt to occur, in the course of, or immediately subsequent to an attack of Measles and Pneumonia. Sudden mental emotion and especially fright, or that state of the

nervous excitement, into which young children are often thrown, when frightened, scared or vexed, often operates as an exciting cause of paroxysms. Irritation of the digestive organs, a cold, confined, or impure atmosphere, and dentition are also mentioned as exciting causes of spasmodic croup.

There are various divisions of croup made by different writers, and there appears to exists not a little diversity among them.

The causes of asphyxia however may be said to be the following. 1st When there is a spasmodic contraction of the glottis called spasmodic croup. — 2d the false croup of writers, an erythematous inflammation of the mucous membrane accompanied with more or less thickening. — 3d The true diphtheritic croup in which there is a membrane formed, and in which all efforts to check its progress after

it has commenced forming generly poves of but little avail.

The disease is in a majority of cases preceded by symptoms of bronchitis. There is a slight and diffused affection of the membrane lining the air passages. Frequently, more or less prodromic symptoms are experienced previous to a full attack of the disease. The child has what is popularly called a cold, sneezes, coughs and is hoarse. The patient is affected with more or less chilliness, succeeded, by increased heat of the surface, lassitude, and loss of appetite. These symptoms vary in intensity and duration. In most cases the fever runs high; commences with the disease and continues untill its closing stage. In others the febrile excitement is less intense; and in what is termed spurious croup, there is often especially in go-

children no symptoms whatever of fever.
It is usually during the night that the
proper symptoms of the disease are devel-
oped - In some cases the croupy symp-
toms make their attack very suddenly
without any apparent prodromic indica
-tions. The child after retiring to rest sud-
-denly awakes from sleep with difficult
and wheezing respiration, and frequent
paroxysms of a loud ringing cough - the
voice is hoarse and gruff - sometimes
there is total loss of the power of speaking.
The child frequently complains of a sense of con-
striction in the throat and sometimes
of pain about the Larynx. The cough
is very peculiar and distinctive - The
epithet "brassy" has been justly given to it.
The noise according to some observers res-
embles, that which would be occasioned
by coughing through a brazen trumpet.

It is a ringing cough, and the expiration has a ringing character; the inspiration is often accompanied with a crowing noise. In general these symptoms, after a short period, gradually pass away, the respiration becomes more free the patient falls again into sleep, and on awaking in the morning, with the exception of a slight degree of hoarseness, and a slight cough, presents no symptoms of any serious disease. On the next evening the respiration becomes again suddenly difficult, loud and wheezing, and the cough convulsive and ringing. The patient feels a sense of impending suffocation, and carries the hand to the throat, as if to remove the cause of suffocation.

The face becomes swollen and flushed, pulse hard and frequent, and the voice hoarse and almost inaudible.

The cough is generly without expectoration, or perhaps causes a discharge of glairy mucous streaked with blood.- The violence of these symptoms may moderate after a time, but soon again increases in violence and usually continues with remissions and augmented exacerbations during the night.- Sleep appears to favor their cessation, or if the patient remains awake, they are often excited by cries, or by the slightest paroxysm of coughing.- The dyspnea becomes excessive and the patient is in a state of great agitation and distress.- In consequence of the increased obstruction in the air passages, the blood ceases to be duly arterialized; and the skin grows dusky, the face becomes swollen and livid, the lips purple,- the pulse becomes feeble and irregular and the extremities cold.- The thirst becomes often excessive.-

There is often expelled by the cough, or by vomiting which often takes place at this period, a quantity of thick, ropy mucus, sometimes mixed with fragments and shreds of a membranous appearance. These symptoms continue for a longer or shorter period according to their intensity:- The cough however as the malady goes on from bad to worse, ceases to be loud and clanging, and becomes husky, and inaudible ~~at a short distance~~, and the voice sinks into a whisper- The respiration becomes short and convulsive, and the patient is every moment in danger of suffocation- The head is thrown back, the face becomes pale, the eyes dull and inanimate and the head face, and neck are bathed in a cold clammy sweat. There is now but little, of any cough, or expectoration

- The pulse is feble, irregular and intermittant and the patient at length ceases to breathe - The intellect being in general unaffected throughout the attack. -

Croup most commonly runs its course rapidly, (proving fatal sometimes within 24 hours, and often within 48 hours from the attack - It may however, continue, five or six days before it terminates, whether death or recovery be the result.) The ordinary duration of the disease is from 24 to 36 hours, though there are cases in which it has been protracted to the 10th or 12th day. - It is particularly liable to recur in the same individual after a longer or shorter interval. Life is destroyed in part circumscribed healthiness by the accumulation in the windpipe of concrete membrane like substance which so frequently attends this disease

and is so peculiar to it that it has the name of membranous croup-. There are cases of recovery mentioned in which this substance has been expectorated in the form of nearly a tube, representing a cast of the trachea-

The treatment must vary somewhat according to the stage, variety and progress of the disease, and the violence of the attack

When the child is suddenly seized with a paroxysm, as in spasmodic croup, relief is generally afforded by placing the patient in an upright position, with the head slightly inclined forwards, and exposed to a full draught of fresh ~~cool~~ air- Dr Mitchell recommends the cold water dash which almost always gives immediate relief. Every means should be taken to remove as much as possible compression from the vessels of the neck- Slapping the child

slightly on the back, will occasionly aid in removing the spasm. Fraction along the spine has been recommended. If the paroxysm does not yield to the above means, the patient should be put as soon as possible into a warm bath; Whilst in the bath, cold water should be sprinkled on the face, which will speedy overcome the paroxysm.. Spasmodic croup is often dependant on dentition, and hence an examination of the childs gums should be made, and if these are found to be at any part swollen or inflamed a free incision should be made down to the tooth. The bowels of the patient should be well moved. The child also should have a pure fresh dry and warm atmosphere, and all methods should be adopted to prevent a recurrence of the spasm.

In the erythematous form or false croup of writers; in mild cases, or in the early and forming stage, an active emetic followed by immersion in a warm water bath and afterwards the administration of small doses of Antimony combined with Calomel, will in many instances put a stop to the further progress of the disease. Almost every writer upon the disease speaks of the good effects of emetics early in the forming stage of the disease. Some little discrepancy of opinion does exist as to the best emetic to be employed. The chief object however to be kept in view in the choice of an emetic in croup appears to be the promptness, certainty and activity of its operation, and these properties being combined in tartarized Antimony it is preferred in most cases. In many mild cases

The compound honey of Squill, given in a sufficient quantity to operate freely as an emetic, and continued subsequently in nauseating doses, will very effectually cut short the disease.

In cases of greater violence or in which the emetic, given in the forming stage has failed to arrest the disease, the most effectual remedy is unquestionably, blood letting. It should be full and decided. Sometimes the application of a sufficient number of leaches to the throat, will be sufficient; but in every instance which is marked by symptoms of considerable severity, or the patient is robust and plethoric, the pulse hard and full and dispnea very great, blood should at once be taken from the arm or jugular to an extent to make a decided

impression upon the system. An eminent English author recommends when "blood letting is employed it should pre-"ceed the emetic"; or at any rate the opera-tion or act of vomating". If the symptoms should again recur with any degree of violence, the bleeding should be repeated. The bleeding must be governed in all cases by circumstances of the patient. In some cases one bleeding will most effectually control the symptoms; but in others we must bleed again and again, if the system reacts with force the pulse continues firm, the skin warm and the dispnea considerable. After the first bleeding the exhibition of an emetic and immersion in a warm bath will prove a powerful adjuvant. It sometimes happens that an emetic given upon the accession of the disease will not operate,

often not even excite nausea, until the patient is bled and the warm bath employed, when immediately copious vomiting will take place, and the repetition of the emetic will be unnecessary.

After the patient is taken from the warm bath, immediately he should be placed in bed and enveloped in blankets, the perspiration induced by the bath and emetic being encouraged by the employment of divided doses of tartarized antimony. After effusion has taken place in the air passages, our chief reliance is to be placed on the use of calomel and tartrate of Antimony.

Blisters are strongly recommended by some writers, but with questionable propriety. In the outset they are likely to do harm. If used at all, they should be placed not

on the throat, but across the upper part of the sternum, or between the shoulders-

During the disease strict attention should be had to the diet of the Child- The diet throughout, the early stages of the disease should be mild and unirritating- During the convalescence, the diet should be gradually and cautiously improved- care being taken that no excess be committed- As there is very considerable danger of a relapse for a long time after recovery, upon the slightest exposure to cold or moisture, or to the most trifling transitions of temperature, the child therefore should be carefully guarded, by appropiate clothing and every other precaution-

When all means have failed to arrest the course of the disease, and signs of approaching death have come on, as lividity of the lips, collapse of the skin &c

tendency to stupor - tracheotomy has been recommended as the last resort - With regard to the propriety of this operation however there is considerable diversity of opinion -

The success cases attending the Operation have been very few - From statistics of 186 Operations of Tracheotomy it is shown that but 39 were cured, the remaining dying almost immediately +